

## Hereditary Breast and Ovarian Cancer Syndrome

Hereditary breast and ovarian cancer (HBOC) syndrome is a condition that greatly increases a person's chance of getting certain types of cancer. HBOC syndrome is *inherited*. This means it runs in families. It is caused by a potentially harmful change in a gene that can be passed from a parent to his or her children. Most cases of HBOC syndrome result from changes in the genes called *BRCA1* and *BRCA2*.



Most breast and ovarian cancers are not related to HBOC syndrome. In fact, only about 5 of every 100 breast cancers and 10 of every 100 ovarian cancers are caused by the condition. A genetic test can tell if your cancer was caused by the altered genes associated with HBOC syndrome.

### WHY IS IT IMPORTANT TO KNOW ABOUT HBOC SYNDROME

When people have HBOC syndrome, there is a 50/50 chance that their children, sisters, and brothers could also have it. Their parents and other blood relatives (grandparents, aunts, uncles, nieces, and nephews) also are more likely than others to have the condition.

A person with HBOC syndrome has up to an 8 in 10 chance of getting breast cancer, compared to only 1 in 10 for the general population. For ovarian cancer, HBOC increases risk to as much as 4 in 10, compared to about 1 in 100 for the general population.

### SIGNS THAT HBOC SYNDROME MAY RUN IN A FAMILY

Some signs that HBOC Syndrome may run in a family are:

- Close blood relatives with breast or ovarian cancer
- Female blood relatives who got breast cancer before age 50
- A female blood relative who had breast and ovarian cancers
- A male blood relative with breast cancer
- Persons of Eastern European (Ashkenazi) Jewish ancestry have higher risk

### GENETIC COUNSELING AND TESTING FOR HBOC SYNDROME

If HBOC is suspected, talk to a genetic counselor or another health care professional who has been trained to take a complete family health history and to discuss the pros and cons of genetic testing.

Genetic testing is a kind of blood test that looks for changes in genes that are potentially harmful. If test results show there is a change in a *BRCA1* or *BRCA2* gene for a person with breast or ovarian cancer, this means that the cancer may not respond to traditional therapies and that there is a high risk that the cancer will occur again. So knowing if the individual has a *BRCA* mutation informs how to treat the cancer and which preventive options to reduce future cancer risk should be discussed.

The affected person's biological relatives can also be tested. Those who test positive can then get screened for breast cancer earlier and more often. They can also be watched carefully for signs of ovarian cancer. This could lead to finding cancer early and treating it successfully. In addition, options like preventive surgery and use of medications to prevent cancer can be considered.

Family members who did not inherit the genetic mutations associated with HBOC syndrome still can get cancer, but their chances are much lower.

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FOR MORE INFORMATION

First, talk with your doctor or other health care provider. More information on breast and ovarian cancer, genetic counseling services, and cancer genetic testing can be found using the resources listed below:

**Centers for Disease Control and Prevention**

- *Breast and Ovarian Cancer and Family Health History*  
[http://www.cdc.gov/genomics/resources/diseases/breast\\_ovarian\\_cancer.htm](http://www.cdc.gov/genomics/resources/diseases/breast_ovarian_cancer.htm)
- *Bring Your Brave*  
[http://www.cdc.gov/cancer/breast/young\\_women/bringyourbrave/index.htm?s\\_cid=cancer\\_BringYourBrave\\_001](http://www.cdc.gov/cancer/breast/young_women/bringyourbrave/index.htm?s_cid=cancer_BringYourBrave_001)
- *Know: BRCA*  
<https://www.knowbrca.org/>

**Connecticut Department of Public Health**

- *Cancer Genetic Counselors in Connecticut*  
[http://www.ct.gov/dph/lib/dph/genomics/cancer\\_genetic\\_counselors\\_ct2015.pdf](http://www.ct.gov/dph/lib/dph/genomics/cancer_genetic_counselors_ct2015.pdf)

**National Cancer Institute**

- *NCI Contact Center* 1-800-4CANCER  
<http://www.cancer.gov/contact/contact-center>
- *BRCA 1 and BRCA2: Cancer Risk and Genetic Testing*  
<http://www.cancer.gov/about-cancer/causes-prevention/genetics/brca-fact-sheet>

**National Institutes of Health**

- *NIH Curriculum Supplement. Understanding Cancer*  
<http://www.ncbi.nlm.nih.gov/books/NBK20362/>

**National Library of Medicine**

- *Genetics Home Reference*  
[www.ghr.nlm.nih.gov/condition/breast-cancer](http://www.ghr.nlm.nih.gov/condition/breast-cancer)